



# Oyster Reef

## invertebrates

**Oyster reefs are full of life!**  
Here are just a few examples showing the variety of invertebrates that take refuge in oyster reefs, either as residents or visitors.



*Crassostrea virginica*  
eastern oyster

In South Carolina, the sight of oyster reefs exposed on muddy flats and along the banks of our creeks and rivers at low tide is a familiar one. **Dense clusters of the eastern oyster, *Crassostrea virginica*, form these unique reefs.** Our oyster reefs are particularly unusual because they are almost entirely intertidal, meaning that much of the reef is exposed at low tide twice each day, rather than being submerged all of the time as they are in other states in the southeastern U.S. and Gulf of Mexico.

Our oysters are a well-loved food, but their importance as a part of the ecology of our estuaries is sometimes overlooked. **Often, oyster reefs are dismissed as uninviting places, but look closer and you will see a complex and interesting habitat.** The reefs improve water quality by filtering vast amounts of water as they strain food and sediment particles out. They can also serve as useful indicators of estuarine health. Oyster reefs also provide critical nursery grounds as a refuge for numerous animals to use as shelter and for feeding. These include both economically and ecologically important species, such as blue crabs, juvenile fish and shrimp. In particular, oyster beds provide a unique habitat for many marine invertebrates (animals without backbones); many you might never have known were there, if you hadn't looked closely.

## Arthropoda

### jointed-legged animals



*Callinectes sapidus*  
blue crab (15 cm)



*Litopenaeus setiferus*  
white shrimp (10cm)



*Armases cinereus*  
squareback marsh crab (5cm)



*Zoepe ostreum*  
oyster pea crab (2 cm)  
(gravid female)

The female oyster pea crab lives in the gills of the oyster as a parasite, feeding on food filtered by the oyster.



Pseudoscorpion (2mm)



*Uca pugnator*  
Atlantic sand fiddler (5 cm)



*Petrolisthes armatus*  
green porcelain crab (3 cm)

The green porcelain crab is a recent arrival to the South Carolina area. It uses its hairy mouthparts to filter small food particles out of the water.



*Alpheus heterochaelis*  
bigclaw snapping shrimp (5 cm)



*Palaemonetes vulgaris*  
marsh grass shrimp (2 cm)



*Harpagria rapax*  
tanaid crustacean (2 mm)



*Panopeus herbsti*  
Atlantic mud crab (2 cm)



*Amphipoea valida*  
amphipod crustacean (3mm)

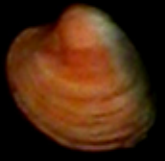


*Anurida maritima*  
oyster springtail (2mm)

The oyster springtail is a common, primitive wingless insect. It uses its hairy body to trap air to breathe when it is submerged at high tide.

## Mollusca

### clams, snails and slugs



*Mercenaria mercenaria*  
northern quahog (6 cm)



*Brachidontes exustus*  
scorched mussel (5 cm)



*Doriposilla pharpha*  
lemon drop nudibranch (2 mm)

The lemon drop sea slug gets its color from its primary food source, the yellow colored boring sponge, *Cliona celata*.



*Nassarius obsoletus*  
mud snail (1 cm)

These gastropods form dense aggregations and leave unique mucous trails that other snails recognize and follow.



*Astrys lunata*  
lunar dovesnail (2 mm)



*Geukensia demissa*  
ribbed mussel (6 cm)



*Urosalpinx cinerea*  
Atlantic oyster drill (5 cm)



*Boonea impressa*  
impressed odostome (2mm)

These two mollusks feed on the oysters - the oyster drill uses its hard radula to drill holes in the oyster shell, and the odostome is a parasite that sucks blood from the oyster flesh near the edge of the shell when it gapes.

## Annelida

### segmented worms



*Dipolydora socialis*  
polychaete worm (1cm)



*Nereiphylla fragilis*  
green oyster worm (15mm)



*Amphitrite ornata*  
spaghetti worm (5 cm)

This tentacled worm lives hidden in a tube and uses its sticky spaghetti-like head extensions to search out food and bring it back to its mouth.



*Marphysa sanguinea*  
rockworm (1 cm)



*Lepidonotus sublevis*  
scaleworm (1 cm)



*Nereis succinea*  
clam worm (12 mm)

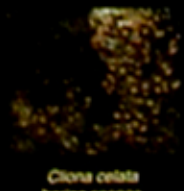
This polychaete worm is a formidable predator and has extendable, muscular mouth parts with sharp jaws that shoot out to grab prey.

## Sessile Invertebrates



*Perophora viridis*  
honeycomb tunicate

Because their larvae have a primitive spinal cord that is lost in the adult stage, tunicates are our closest relatives on this poster!



*Cliona celata*  
boring sponge



*Bugula neritina*  
bryozoan



*Nematostella vectensis*  
anemone (3mm)

Associated with this community are many predators, drawn to oyster reefs by the large variety of animals living within them. Crabs and small marine snails prey on the oysters themselves, as do flatworms, while other worms and sponges bore into oyster shells. Numerous fish, crabs and birds forage amongst the oyster reefs, preying on the abundant invertebrates.

As oysters settle and develop over time into complex reefs, they form the only hard substrate in an otherwise soft muddy bottom. In doing so, they enhance biological diversity in our estuarine bays, creeks and rivers. Oyster reefs provide plenty of nooks and crannies for a diverse array of small marine invertebrates. Many fish use these as nesting sites. Large numbers of crustaceans of all shapes and sizes live among shell clusters. Several types of mussels attach and grow in the available spaces created by the growing oysters, while barnacles and other encrusting animals compete for space. Many species of marine worms take up residence in the mud and hard substrate provided by the oyster habitat. **An oyster reef can provide a long lasting home for all these animals.**



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